THE DENTAL PRACTITIONER

monthly journal for the Practitioner and his Staff

VOL. IV, NO. 4 DECEMBER, 1953

Incorporating the Official Supplement of
The Dental Laboratories Section of the Surgical Instrument Manufacturers' Association

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THE DENTAL PRACTITIONER

A Monthly Journal for the Practitioner and his Staff

(Incorporating the Proceedings of the British Society of Periodontology and the Official Supplement of the S.I.M.A.—Dental Laboratories Section)

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SOLE AGENTS: *Australia*: Robertson & Mullens Ltd., Melbourne; *Canada*: The Macmillan Co. of Canada Ltd., Toronto; *New Zealand*: N. M. Peryer Ltd., Christchurch; *United States of America*: Staples Press Inc., New York; *Denmark*: Einar Munksgaard, Copenhagen; *Norway*: Olaf Norli, Oslo; *Sweden*: Gumperts Aktiebolag, Göteborg; *India*: The Dental Publishing Company, Bombay.

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THE

DENTAL PRACTITIONER

A Monthly Journal for the Practitioner and his Staff

Vol. IV, No. 4 December, 1953

DITORIAL

BRIDGES

THE art of replacing the single lost tooth is centuries old, and many examples may be found in some of the dental museums. Most of these depended upon wiring the tooth into position using the natural teeth on both sides of the lost unit. With the advent of high-precision casting at the beginning of this century a new technique was evolved. The teeth could now be prepared, an impression taken, and a prosthetic appliance made to fit accurately into position in the mouth. This new technique led to the type of appliance that could be actually fixed by a cementing process, as opposed to the older type of movable bridge. On the question of the construction of bridges there has been little controversy; the methods have changed with the discovery of new materials and the techniques have become more accurate. Many men have developed their own ways of constructing bridges with a high degree of success, but the basis of this process is much the same and has tended to leave the field bare of argument. Not so the field of design. There has always been, and probably always will be, room for debate on the best method of designing a bridge, be it for one tooth or for three or four. In the main the controversy ranges around the question "should a bridge be completely fixed or just fixed at one end only?" Each school of thought produces its own argument on behalf of its favourite bridge design. In an article in this issue on "The Design and Construction of Bridges" the authors come down heavily on the side of the completely fixed type of bridge. A new classification of bridge design relegates the fixed-movable bridge to the fourth class, a principle that may not be accepted by the advocates of this type of bridge. It is felt, however, that this original article will help practitioners who in these days of economy are still able to practise the advanced restorative techniques of dentistry.

The Editors and Publishers take this opportunity of wishing all their readers a very Happy Christmas, and increasing success and prosperity in the New Year.

THE DESIGN AND CONSTRUCTION OF BRIDGES

By **N. LIVINGSTONE WARD**, L.D.S., D.D.S.

Assistant Director of Conservative Dentistry, London Hospital Dental School, Consultant Dental Surgeon, London Hospital

and **R. V. P. CAMPBELL**, H.D.D., L.D.S. R.C.S. (Edin.), D.D.S.

PART I—THE FOUNDATION

In discussing bridgework in dentistry, there has been a tendency on the part of the profession to dismiss the subject lightly as being difficult and deleterious. It must be admitted that in the past bridgework was under a cloud, particularly in the focal infection era. If the simple principles of design and construction were more widely known their value would be appreciated to a greater extent. Cases must obviously be selected with care and within the limits of physiological tolerance of the tissues. For the general practitioner who contemplates bridgework it is suggested that only those cases requiring the replacement of one or two teeth should be attempted at first. Beyond this it becomes a question of specialized technique. (Compare *Figs.* 1 and 2.)

A B

Fig. 1.—Simple type of bridge replacing an upper lateral. A, Before treatment; B, After treatment.

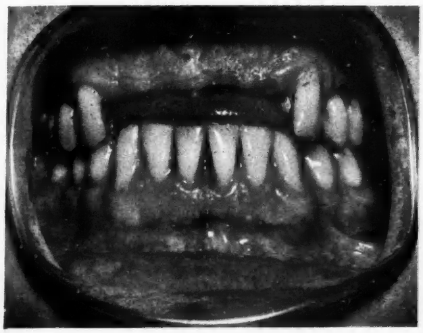
A bridge has been defined as "a structure which spans a space, and which is designed to sustain or support not only its own weight but any additional loads or stresses that may be brought upon it". If this definition is examined it will be realized that it applies to any type of bridge, whether in a mouth or over a river. In fact many engineering principles of bridge building may be applied to the design and construction of a dental bridge, (some famous bridges may be recalled to mind to illustrate this point). A bridge connects together two sites of activity which are dependent upon each other for their ultimate survival. Without the bridge a slow deterioration tends to take place in both areas and the surrounding district, and the stress of that area will affect places far away from the initial site.

The prevailing conditions must be carefully assessed, including economic, before any plan may be commenced. Where dental bridgework is concerned two principal aspects have to be considered, the biological and the mechanical; and a third, the æsthetic, must be fitted into the two former aspects.

BIO-MECHANICAL PRINCIPLES OF DENTISTRY

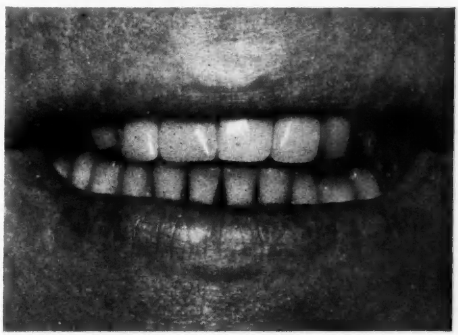
The basic tenet of all modern dentistry is that it is quite impossible to examine or treat an individual tooth without regard to the others. Nature has designed the oral mechanism to operate as a single unit, and any untoward occurrence that tends to upset

the normal working of this delicate anatomical mechanism will bring about changes in the whole. If a single tooth is removed from the arch containing all the teeth, changes affecting the whole dentition may commence. The space tends to be reduced by the teeth on either side drifting inwards, and at the same time the tooth in the opposing jaw tends to move out of occlusion into the space. As soon as this begins to happen the forces on the teeth will change direction, and the contact points between the teeth will open up in that area. These two factors can bring about a future collapse of the oral mechanism in that area which will in time affect the whole mouth. Admittedly this may take some time, but it must be realized that if a tooth is extracted in a full arch both arches will eventually break down with dental disease. Loss of the contact points will cause stagnation areas which will lead to dental caries on the proximal surfaces. Drifting of the teeth, causing forces to be imparted in the wrong direction, will lead possibly to periodontal disease. Any force on a tooth should be directed in the long axis of the tooth, the force being received as in a hammock of suspending fibres. If this force or any resultant of forces is directed on to the tooth at an oblique angle to the long axis of the tooth, harmful results will always occur (*Fig.* 3). (This may be seen on a tooth when one half of a denture band breaks off, the other half directing a force at right angles to the tooth.) A bridge to replace the lost tooth will prevent these deleterious effects, and in fact, if designed correctly, will correct any adventitious forces on the teeth and also restore lost contact points, thus preventing any future dental disease. As it is merely joined to two teeth, it cannot have the undesirable effects that a large partial denture can have on the soft tissues. (The " spoon " denture was designed to replace the single tooth and at the same time to tend to prevent these undesirable effects.)



A

B



C

Fig. 2.—Complicated bridge replacing upper laterals and centrals, with three-quarter crowns on canines and premolars. A, Before treatment; B, Try-in of bridge; C, The finished bridge.

BIO-MECHANICAL PRINCIPLES OF BRIDGEWORK

The principles involved in designing a bridge are three-fold: (1) biological; (2) mechanical; and (3) æsthetical. These may seem mere

words unrelated to routine dental treatment, but an illustration may help to place them into their correct perspective. It is perfectly possible to construct a bridge from one upper third molar to the other when all the other teeth are missing, using a full crown on each tooth. Outside the mouth it may be a beautiful piece of work, perfect in all aspects, a work of art in its æsthetical appeal even when fitted.

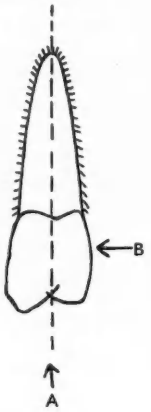


Fig. 3.—Distribution of forces on a tooth.
A, Through long axis of tooth; B, At 90° to long axis.

From a biological angle it is just a colossal failure, for the two remaining teeth would not support such a structure. The teeth would be just torn from their tissues. The bridge may satisfy the requirements of the mechanical and the æsthetical but obviously not the biological. The reverse may be true in the same sort of way. The cavities may be perfect, with all the forces in the right direction, but the bridge is useless if it breaks through inefficient soldering of the pontic to the abutments. This bridge may satisfy the biological but not the mechanical. It is obvious that these three aspects must be in perfect balance for successful treatment. The biological and the mechanical are the most important, and it is these aspects that must always be placed before æsthetics. It is quite wrong to weaken a bridge—or to reduce any dental treatment—for the convenience of the patient. A certain amount of gold will always show and it should not be removed merely because the patients say they do not like it. It may only be removed providing that by its removal the balance of the bio-mechanical factors are not disturbed. The æsthetics of dentistry should be fitted into treatment after the solution of any bio-mechanical problems. It is only in this way that the work will be lasting and satisfactory to all parties. This is particularly important when considering facing gold inlays with acrylic or silicate. The retention of the inlay must never be weakened at the expense of the appearance.

1. Biological Basis of Bridgework.—The main factors to satisfy on the biological side are:—

a. That a state of health exists in the abutment teeth and their supporting tissues.

b. That normal conditions may be reproduced and simulated as nearly as possible.

c. That the preparations be made to receive and accurately accommodate attachments, and withstand the influence of stresses.

d. That the bridge when inserted will not cause any irritation or abnormal stimuli to the dental tissues which will give rise to any pathological condition.

A bridge is a long-term policy and fundamentally is part of preventive dentistry. Bridges should be placed only in sound clean mouths where the patient is interested in keeping the mouth in the best possible condition. The mouth must be carefully examined together with the general health and attitude of the patient. All fillings and any periodontal treatment necessary should be provided first. Bite-wing radiographs are essential for estimating the number and extent of carious lesions, and full-mouth radiographs for the condition of the roots and bone formation. A bridge must be built on a firm foundation and not on "shifting sands". If a tooth is likely to cause trouble it cannot be used as a bridge abutment. If possible sound live teeth should be used. The chosen teeth, which do not have to be at each end of the bridge (*see* Part II, Design), have to withstand additional forces in supporting the pontic and must be large enough to retain the bridge and support its weight. The abutment tooth must have a

well-formed crown, good root formation, with normal periodontal membrane and apical region, surrounded by sound bone. Providing that there is no infection around the tooth and that it is in occlusion with an opposing tooth, it will usually be satisfactory as a bridge abutment. Radiographic evidence will help in determining these points. (*Fig.* 4.)

The primary object of bridgework is to restore the function of the lost tooth. A bridge acts as a space maintainer and maintains the other teeth in their correct position. What it must never do is to cause deleterious changes

A B

Fig. 4.—A, Radiograph of area before treatment (note retained root); B, Radiograph 12 months after insertion of bridge.

to take place in the mouth owing to its presence. It is a physiological condition of bone that it requires a constant slight stimulation, but if this stimulation becomes too great it leads to pathological changes. Care must be taken in the design of the bridge to ensure that this stimulation is maintained, but it must not exceed the bounds of physiological tolerance. The occlusal planes must be checked to make sure that there are no additional forces on the teeth which tend to give rise to horizontal movements. All forces should be directed through the long axis of the tooth. To aid in this object, it is always better to reduce the size of the occlusal surfaces of the abutment teeth with the inlays. The pontic should also be slightly smaller buccolingually than the original; it can be a fatal policy to make it greater.

Once a bridge has been designed, it should be finished as soon as possible. The abutments should be prepared and the bridge inserted at the earliest moment. As the mesial and distal surfaces are removed together with the occlusal surface, the tooth may move before the bridge is fitted. Good dressings, e.g., a crown form with zinc oxide and eugenol, are essential, for they serve two purposes: The tooth must be kept in position while the bridge is made, and the exposed dentine must be protected. If the dentine is looked upon in the same way as the pulp of a tooth less damage will occur in many cases.

2. Mechanical Basis of Bridgework.—The biological basis has dealt with the bridge from the aspect of the teeth and their surrounding tissue. The mechanical basis deals with the bridge itself, and for success there are certain requirements of a mechanical nature:—

a. That attachments are strong enough to bear all stresses and meet the requirements of occlusion and articulation.

b. That the structural form be adapted to these demands and have inherent strength to support the pontics during function.

c. That the pontics be so formed and shaped as to meet the needs of strength, sanitation, and æsthetics.

In assessing the mechanical problems of bridge design, the first and most practical point is that the bridge must stay in position. Retention is all-important and the design and number of abutments must be chosen with care. It will be shown that the most satisfactory abutment is the three-quarter crown (*see* Part II). There is a definite distinction between the ordinary gold inlay and the bridge abutment. A gold inlay planned on normal

Black's principles is not enough; the assessment must be based on a wider plane.

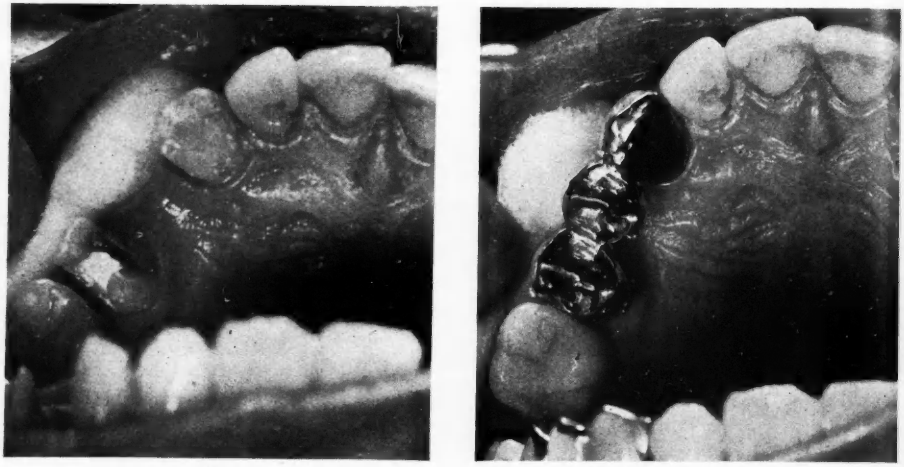
The use of study models in designing the bridge cannot be over-emphasized. Full upper and lower casts are necessary and they should be mounted on some form of anatomical articulator, so that the various movements, particularly lateral excursions, may be followed. Tentative designs may be drawn on the model, and with the aid of a surveyor the teeth may be cut to show the angle of insertion. The articulation should be studied and allowance made for any displacing force that may arise.

This may appear a long way round and unnecessary, but if the bridge is to give satisfactory service over a long period of time, which is the object of the treatment, then everything should be discovered and assessed before the teeth are touched.

It is easier to re-make an amalgam than a bridge.

PART II—THE DESIGN

It is usual to divide bridges into two types, the "fixed" and the "fixed-movable". This is in actual fact confusing when describing the various forms of bridges, as these types tend to overlap in modern bridge design. The word "movable" in any case is loose terminology and "stress-broken" is a more accurate description. A more scientific classification of bridges is required and one which is founded on the relationship of the pontic to the abutment is basically sound. (The word "pontic" denotes the replaced tooth while the "abutment" is the anchor tooth of the bridge. The "attachment" is that portion of the gold that covers the abutment tooth.)

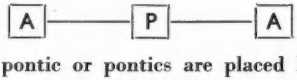


A B

Fig. 5.—Class 1 bridge, replacing $\underline{4|}$, three-quarter crowns on $\underline{5}$ $\underline{3|}$. A, Preparations; B, Finished bridge.

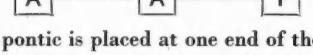
Using the prefix "P" for the pontic and "A" for the abutment, the following classification of the types of bridges used in dentistry is presented.

Class 1.—



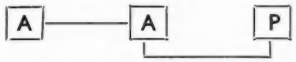
The pontic or pontics are placed between the abutments, the whole being soldered together in a completely fixed bridge.

Class 2.—



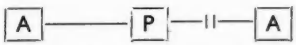
The pontic is placed at one end of the abutments, either anterior or posterior, the whole being soldered together.

Class 3.—



The pontic is placed away from the abutments and attached to them by a bar, bypassing natural teeth, the whole being soldered together.

Class 4.—



The pontic is placed between the abutments, but soldered to only one of them, a stress breaker being inserted into the other abutment tooth.

This classification gives the fundamental design of all bridges in their simplest form; it is axiomatic that a minimum of two abutments is always required. The individual classes and possible extensions will be discussed and explained so that any bridge may be designed from the principles laid down in the classification.

Class 1 (*Figs.* 5, 6).—This is the most classical of all bridge designs and undoubtedly the most satisfactory. It is used mainly in the posterior region to replace premolars and molars, and practically without exception in extensive multiple bridgework. It is designed with the two abutments one on each side of the pontic, the whole being soldered together into a completely fixed structure. The teeth will carry one or two pontics placed between two abutments, but it should be noted that the number of pontics on a bridge is assessed by the space present and not the number of missing teeth. In many cases it is found that two pontics will replace three missing teeth where drifting has occurred. When more than a full two-tooth space has to be replaced by a bridge the guiding principle is to use an extra abutment for each additional missing tooth. For instance, the safest and most efficient method of bridging the four upper incisors is to use both canines and both premolars as the abutments (*see Fig.* 2).

The extra support of the premolars makes for added retention and a greater distribution of the forces incurred over four teeth instead of only two. It also prevents any fear of the bridge spreading by locking it back on to the posterior section.

Diagrammatically the Class 1 bridge may be represented as:—

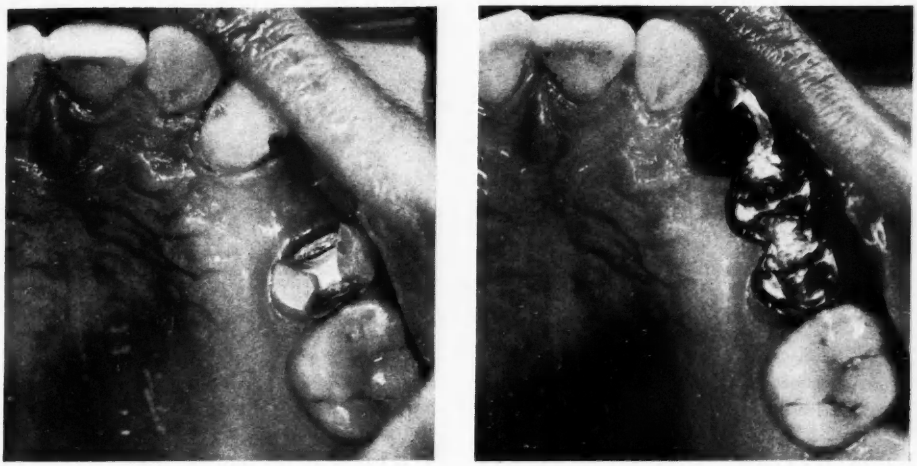
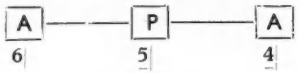


Fig. 6.—Class 1 bridge, replacing $\overline{|4}$, three-quarter crowns on $\overline{|3\ 5}$. A, Preparations; B, Finished bridge.



or $\overline{7}$ $\overline{6}$ $\overline{5}$

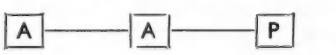
missing

or in an extended fashion as:—

A	A	P	P	P	P	A	A
4	3	2	1	1	2	3	4

The Class 1 bridge should be used wherever possible, providing that the teeth on both sides of the missing tooth are biologically sound to support the additional stresses of a bridge. If these teeth are not suitable as abutments then the other designs in the classification must be considered.

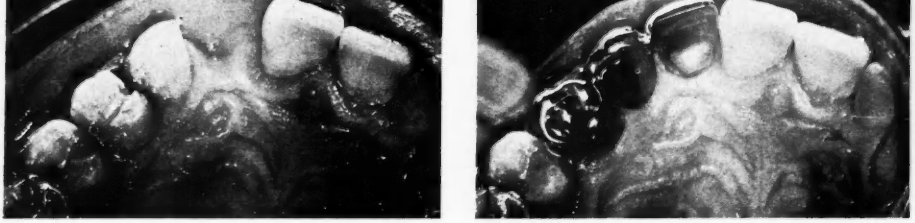
Class 2 (*Fig.* 7).—In the restoration of the single tooth, two teeth must carry the pontic, and it must be remembered that there is a tolerance limit on each tooth, which if over-extended will cause deleterious changes in the tissues. The Class 2 bridge design presupposes that there is no suitable abutment on one side of the missing tooth, but that the tooth on the other side is satisfactory. In that case the second abutment is placed adjacent to the first, the two abutments being together. Diagrammatically it may be shown thus:—



or $\overline{4}$ $\overline{3}$ $\overline{2}$

missing

The arrangement of the design is such that the two abutments are placed next to one another with the pontic soldered to one of them. This gives a free end to the pontic which is balanced by the second abutment being soldered to the first. It is the ideal design for the replacement of a missing canine or lateral. Centrals and laterals make poor abutments so in this class as a good abutment cannot be found anteriorly then one is used posteriorly behind the first abutment. If you cannot go forward—go back. It is a useful design to replace the first premolar when the canine is missing from an early age and the space has closed, the premolar prior to its extraction being next to the lateral. Difficulty is often experienced in replacing lower incisors by bridgework. Invariably the lower incisors and centrals are useless as abutments. In the Class 2 design, the canine plus the first premolar are used to replace the lateral, while the first and second premolars are the abutments for the replacement of the canine. This also applies to the upper incisor teeth. The abutments are soldered together with the pontic, making a completely fixed structure, and giving a highly serviceable bridge which has a useful place in the classification.

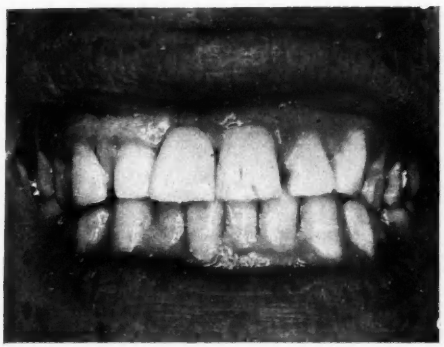


A B

Fig. 7.—Class 2 bridge, replacing $\underline{2}$|, three-quarter crowns on $\underline{43}$|. A, Preparation of teeth; B, Finished bridge.

Class 3 (*Figs.* 8, 9).—Progressing from Class 1 to Class 2 it will have been noted that in Class 1 the teeth next to the missing tooth are both used as abutments, in Class 2 only one tooth next to the missing tooth is used. In Class 3 neither of the adjacent teeth is used.

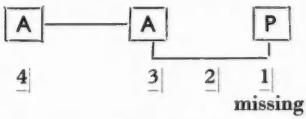
The Class 3 bridge design is employed when both teeth next to the missing tooth are unsuitable. The abutments are chosen away from the missing tooth and joined by a bar to the pontic (the so-called "spring-cantilever"). According to the principles already laid down, two abutments are used. The main use of this design is for the replacement of the missing central tooth, but it may be used in certain other specialized instances. In replacing the upper central the bridge is designed with attachments on the canine and first premolar, soldered together with an arm joined to the canine abutment. The arm by-passes the lateral and carries the pontic for the central. The arm must arise from the midline of the nearer abutment, for if it springs from between the abutments a dead space which cannot be cleaned will occur between the teeth.



A

B

Fig. 8.—Class 3 bridge, replacing 1|, three-quarter crowns on 43|. A, B, Two views of fitted bridge.



If necessary when the canine is unsuitable, then the two abutments would be the two premolars, and the bar by-passing both the canine and the lateral to replace the central. This class of bridge would rarely be used in the posterior region of the mouth. In the past this type of bridge has been made with one abutment only, usually the canine. The danger of this arrangement is that the canine rotates around its axis and the pontic moves labially. The force of the lower teeth on the lingual aspect of the upper pontic tends to move it in a forward direction. This force is directed back to the canine and causes a rotating movement. This will not occur if two abutments are used together, as the forces will be distributed back to the first premolar as well and will stabilize the position of the abutment teeth and the pontic.

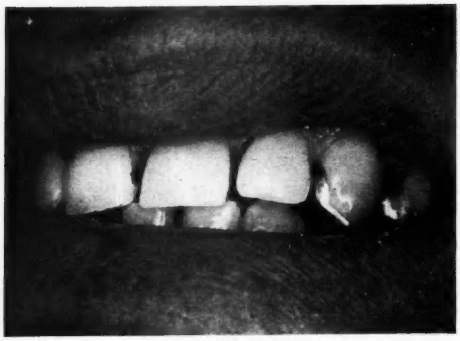
Class 4 (*Figs.* 10, 11).—The basis of Class 4 is the single abutment soldered to the pontic, while the other end of the pontic is joined in a stress-broken attachment to the second abutment. It is the contention of the authors that this class of bridge should only be used when the position of suitable teeth is such that parellelism is impossible.

This is the old so-called "fixed-movable" type of bridge, but it should in fact be as fixed as possible with the absolute minimum of movement, even in the stress-breaker. The principle of this bridge has been based in the past on a premise that teeth should not be splinted together, but should possess their individual movement through the periodontal membrane. The disadvantages of this design outweigh the theoretical advantages of individual movement. It is indeed very doubtful if this movement is required at all, and it is much more likely to give rise to adventitious movements in the wrong direction. It is felt

that this type of bridge owes its vogue to the fact that it is easier to make as the two abutments do not have necessarily to be parallel. The practice must fit the theory, so a theory of independent movement in bridgework was

A

B



C

Fig. 9.—Class 3 bridge, replacing $\underline{1}|$, three-quarter crowns on $|\underline{34}$. A, Before treatment. B, C, Two views of fitted bridge.

devised, and thousands of unsuccessful bridges have been built on it. As the age of the tooth advances, physiological changes take place causing a loss of supporting tissue. Hence the teeth should be splinted together for stabilization purposes. This treatment is often performed in cases of periodontal disease. The principle of the fixed-movable bridge cannot be maintained, for it seems that really anyone over a certain age should have a completely fixed bridge with the desirable splinting action. Before physiological changes arise it may be argued that some form of fixed-movable may be desirable, but from all the thousands of bridges made on the completely fixed principle it appears quite unnecessary, if the abutments can be made parallel. The real objection to the fixed-movable is that nearly always there is far too much movement, which is bound to be taken up ultimately by the single abutment tooth. The ordinary stress-breaking lock, even if accurately fitting, can still move out occlusally and does on mastication. Forces are also distributed through the walls of the lock in a horizontal manner, which are the worst types of force to inflict upon a tooth. Eventually the tendency is for the stress-breaker to come away from the inlay abutment or for the inlay itself to be dislodged. The difficulty of repair in these cases can be well imagined.

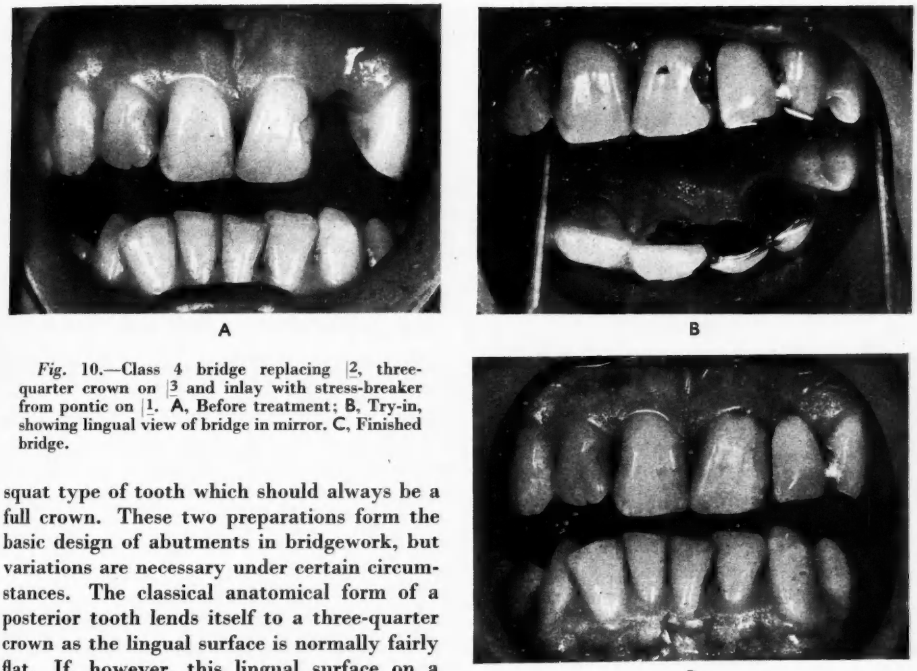
All these faults are easily overcome by inserting bridges of Class 1, 2, or 3. If it is essential from a positional point of view to construct a Class 4 bridge, it is best to employ an inlay of very good retentive properties with the stress-breaker actually inside the inlay on the abutment tooth, or to use precision locks on the lines of Cheyes attachments.

GENERAL CONSIDERATIONS IN BRIDGE DESIGN

1. Abutment Design.—It is axiomatic that the retention of a bridge is of fundamental importance, and yet a number of bridges inserted are expected to do valuable service but fail owing to lack of this factor (*Fig.* 12). The ideal method of retention is by the use of

three-quarter crowns on all abutments. The preparation is collarless so that the minimum of tooth substance is removed and the whole occlusal surface must be covered by gold. The only real exception to this rule is the short squat type of tooth which should always be a full crown. These two preparations form the basic design of abutments in bridgework, but variations are necessary under certain circumstances. The classical anatomical form of a posterior tooth lends itself to a three-quarter crown as the lingual surface is normally fairly flat. If, however, this lingual surface on a molar becomes bulbous, much more tissue has to be removed to achieve the same result. In these cases the three-quarter crown is replaced by an M.O.D. with the whole occlusal surface included. A bridge abutment should never be less than this type of preparation. If a tooth is not capable of having this type of preparation then it is preferable to choose another class of bridge design. Hence from their anatomical form both the centrals and the laterals make poor bridge abutments. Three-quarter crowns can sometimes be prepared on centrals, but for the lateral a full jacket crown with a distinct collar for a gold shoulder is essential.

In premolars the preparation of three-quarter crowns is not difficult as these teeth may nearly always be prepared without any modification. The canine is the perfect tooth for the three-quarter crown, but the preparation may vary in one respect: In long, narrow canines the slot type of cavity is made, while if the tooth is short and squat then a pin three-quarter crown is necessary.



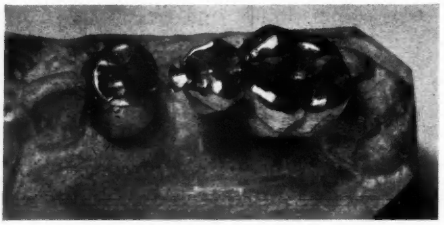
A B C

Fig. 10.—Class 4 bridge replacing $\underline{2}$, three-quarter crown on $\underline{3}$ and inlay with stress-breaker from pontic on $\underline{1}$. A, Before treatment; B, Try-in, showing lingual view of bridge in mirror. C, Finished bridge.

Unless the retention is of a high order the tendency is for one end of the bridge to come adrift. In the case of a Class 4 bridge the abutment containing the stress breaker may loosen and become detached. Bridges are not easily repaired and these faults should not arise in a well-designed bridge.

There is always an inherent tendency for bridges, like the teeth themselves, to drift, unless they are stabilized by the natural forces upon them. Upper bridges tend to drift buccally or labially, and in certain forms a torsion effect may rotate the teeth. Lower bridges tend to move lingually. This is more

apparent in multiple bridgework than in the single replacement. The bridge must be designed so that all forces are minimal and distributed as evenly over the teeth as possible. Two teeth for one or two pontics, with an additional abutment for each additional pontic, is a sound maxim for successful bridgework. However, it must be remembered that each additional tooth employed means more biological interference and, if trouble does arise, more difficulty in repairing the damage. For instance, in a Class 3 bridge replacing the upper central, by-passing the lateral, if only one abutment is used instead of two the bridge will spread labially by rotation of the canine. To prevent this the premolar is used as a second abutment soldered to the first. It might be argued that a single abutment is all that is needed with rests on the central and lateral, that is the pontic resting on the two teeth on each side of it. In this case three teeth are really being used as abutments for one pontic. It is bad dentistry to place rests directly on the enamel, so both the central and the lateral will require inlays inserted in them to receive the rests attached to the pontic. These inlays must be sufficiently stout to support the main abutment on the canine against the biting stress of the bridge. If the retention of the inlays is poor they will eventually loosen, and repair is extremely difficult as the rests are still present and protruding into the cavity. If the retention is good there is always the possibility, particularly in the lateral, that the preparation is very near the pulp; there is even the danger of exposure in obtaining the required depth. It is obviously much saner to design the Class 3 bridge with three-quarter crowns on the canine and first premolar, soldered together, than increase the risk of grave damage to the lateral and central.



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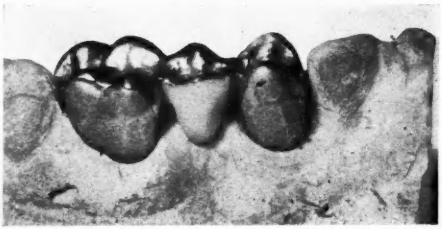

C

Fig. 11.—Class 4 bridge. Model of stress-breaker attached to pontic which fits into abutment. A, B, and C show views of this type of bridge.

Fig. 12.—Two lower bridges replacing lost molars. Through lack of sufficient retention these bridges were remade after repeatedly loosening. Three-quarter crowns were used to replace the M.O.D.s.

The three-quarter crown also tends to prevent further caries by its coverage of the tooth. There is no doubt that a bridge designed on the suggested classification using three-quarter

crowns wherever possible will provide everything that is needed in a bridge with the absolute minimum of trouble to the patient and the dentist.

2. **Pontic Design.**—Although many types of pontic have been designed, it is suggested that all pontics may have exactly the same characteristics. The pontic first and foremost replaces the missing tooth as near as possible and has the attributes of a natural tooth. It must be a functional tooth in the oral mechanism, anatomically correct, and non-irritating. Food stagnation areas must be guarded against as they will cause irritation. An efficient pontic depends upon the design and the material. The material that is kindest to the tissues over a long period is probably highly glazed porcelain. The porcelain and gold pontic with the porcelain against the tissue and the gold on the occlusal surface is undoubtedly the best design. They are, however, somewhat difficult to construct. The easiest straightforward method is to use an all-gold pontic with an acrylic facing. All the walls of this pontic are in gold, except where it is hollowed out on the labial surface for the facing material. Highly polished gold is next to the tissue and the occlusal surface is also of gold to take up the biting stress. The mesial and distal surfaces of any pontic must be gold for soldering purposes. This type of pontic ensures a serviceable result with the minimum of trouble.

In conformity with the biological principles of bridgework, the pontic should be slightly

Fig. 13.—Correct design of pontic in cross-section. Dotted line shows position of roots prior to extraction.

smaller bucco-lingually than the natural tooth it replaces. The part of the pontic which needs special care in its design is the portion nearest the tissue. The pontic must *never* give rise to any pressure whatsoever on the soft tissues. The practice of paring down the model to ensure that the pontic is well seated, save in cases of immediate bridgework, is to be deprecated. In immediate bridges the tooth is removed from the model and the pontic seated a little way into the socket. It should be possible to pass a piece of floss silk between the tissues and the pontic with ease. In deciding the width of the pontic at the base next to the

Fig. 14.—Pontic designed as occlusal surface only.

tissues, a standardized procedure should be used. The width should be equal to or a little less than the width of the root of the tooth at that level, and this method is employed in all cases where the pontic will show (*Fig.* 13). If the bridge is in the posterior part of the mouth and the pontic does not show on opening wide, there is no need to make this æsthetic type of pontic with a facing. In this vicinity the pontic may be made as a pure occlusal surface with no part of the pontic near the tissues. With this type of pontic all irritation and food trapping is completely eliminated and gives excellent service (*Fig.* 14).

The design of a pontic should be as simple as possible and conform to the principles laid down.

SUMMARY

1. A new classification of bridge design is presented, based on biological and mechanical principles.

2. The completely fixed bridge is preferable to the "fixed-movable".

3. The bridge should be based on a minimum of two three-quarter crown preparations for the abutments.

(To be continued in a subsequent issue.)

REMOVAL OF NAME

The name of Mrs. A. Gwynne, Scotholme House, Radford Road, Nottingham, has been ordered to be removed from any dental list in which it is now included. The name may not be included in future in any dental list unless the Tribunal or the Minister so directs.

RESTORATION OF FUNCTION BY DENTURES IN SMALL CHILDREN

By **P. M. C. JAMES**, L.D.S. R.C.S., D.P.D.
Eastman Dental Hospital

THE dental surgeon often sees children of 3 or 4 years of age whose deciduous dentition is beyond reasonable hope of repair. There may have been a general enamel hypoplasia with the superimposition of caries, or some powerful local factor may be involved such as the use of a sugar or syrup dummy. But whatever the cause, extraction of all or most of the teeth is often inevitable, and the child is then faced with the prospect of three or four years without an effective masticatory apparatus.

In suitable cases of this nature restoration of function by fitting dentures has been found very successful. Many children take even to full prostheses at once, becoming accustomed to them as quickly, and often quicker, than the adult patient. Naturally, children have to be carefully selected, as a high degree of co-operation is necessary. The attitude of the parents towards such a line of treatment must also be considered.

TECHNIQUE

The author finds that from six weeks to two months after the extractions the mouth is in a suitable condition to start proceedings. Composition impressions are taken at the first visit, and special trays constructed in reinforced base-plate material, post-dammed in the usual manner. At the second visit accurate impressions are obtained, using plaster, hydrocolloid, or alginate material, whichever is preferred. Plaster has been found the most satisfactory in edentulous jaws, and Zelex where teeth are standing, but the material most likely to be tolerated by the child can be decided in individual cases. The bite, using the usual type of wax or composition bite-blocks, is recorded at the third visit. This might be expected to be the most difficult part of the operative technique, but if the child is fresh and unflustered he will close readily into the correct position, only adopting abnormal jaw postures if he is tired or worried into trying too hard. If the patient becomes tired when the bite is almost, but not quite, satisfactory, it has been found better to leave the final adjustment until the try-in stage; the child will be fresh again and the trial dentures are less bulky and more easily managed than bite-blocks.

The teeth required for the denture usually have to be specially made, in acrylic, and the molars should have fairly flat grinding surfaces. If, as often occurs, the lower incisors are the only teeth left standing in the lower jaw, it is useful to incorporate a low labial bow, relieved away from the soft tissues, in 0·8 stainless steel wire (*Fig.* 1). This gives added stability and prevents the lower denture from dropping back under the tongue.

In the final stage adjustments and grinding-in are performed in the usual manner. The parent is instructed that the dentures should be worn by day only, and the child should be seen in a few days to observe progress, ease sore spots, etc. Routine re-examination should be carried out every three months.

As the main growth of the jaws occurs behind the denture-bearing area, remakes are not necessary as often as might be imagined; the main indication for new dentures is found to be the overclosure that occurs as a result of the failure of the dento-alveolar structures to keep pace with the growth in the vertical dimension of the face. The child often compensates for this discrepancy by thrusting his mandible forward into a pseudo-Class III relationship with the upper denture. When this is observed, it is necessary to remake one or both of the dentures. The average "life" of the full upper and lower denture seems to be in the region of one year, but varies with the growth of the child.

When the first permanent molars start to erupt the plates may be ground to accommodate

them, and the whole will then also function as a space maintainer. When the incisors appear, they can be accommodated by grinding the dentures at first, but the time comes when they are better discarded, and new space maintainers fitted when the eruption of the incisors is complete.

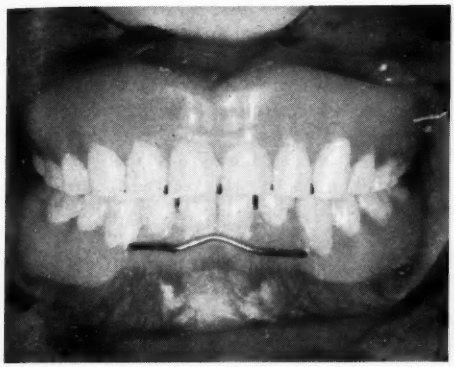

Fig. 1.—Full upper and partial lower denture in a child of 3¾ years, showing the position of the low labial arch included for greater stability.

Fig. 2 shows a 4-year-old child wearing her dentures. In all cases the children have been delighted with their "new teeth" and are most reluctant to part with them for remaking or any other reason.

REPORT OF CASES

Case 1.—*Jimmy, aged* 4½ *years.*

This boy was suffering from advanced caries of all his deciduous teeth, all of which were unsavable except his upper second molars. These were conserved and the rest extracted. Dentures were fitted in January, 1950. After one year he showed signs of overclosure, and the upper denture was remade. In November, 1951, his first permanent molars started to erupt, and the dentures were adjusted accordingly. In July, 1952, the lower denture was discarded because of the eruption of his lower incisor teeth; this had functioned satisfactorily for 2½ years. He continued to wear his upper denture until August, 1953. In all he had 3½ years' benefit from this treatment.

Case 2.—*David, aged* 4 *years.*

This little boy was referred by his School Medical Officer about the rampant caries of his deciduous teeth. On examination all his teeth except the lower canines and incisors were found to be beyond hope of conservation. His saliva was tested, and a high lactobacillus count, 1,600,000 per ml., was recorded.

All the teeth except the lower incisors and canines were extracted, and dentures fitted in January, 1952. In October, 1952, the upper denture was remade to adjust for overclosure. At the end of that year so many of his permanent teeth were erupting that the plates were discarded.

Case 3.—*Brenda, aged* 3¾ *years.*

This little girl attended complaining of pain. On examination she was found to have abscesses on six of her deciduous teeth; all the others, except her four lower incisors, were unsavable, and were extracted. Dentures were fitted in October, 1951. In March, 1953, the lower

Fig. 2.—Child of 4 years wearing dentures.

first permanent molars erupted and it was decided to remake the lower denture when they were completely in position. This was done in July, 1953. The upper denture was still satisfactory.

In all the above cases the children had no difficulty in managing their dentures, and were able to deal adequately with any type of food. Their general health was observed to improve considerably following the extraction of the diseased teeth, and the parents remarked on their increase in weight. A similar observation was made by Slack and Davey (1953).

REFERENCE

SLACK, GEOFFREY L., and DAVEY, JOHN R. (1953), "Full Dentures for a Three Year Old Boy", *Brit. dent. J.*, **45**, 125.

THE QUEEN has been graciously pleased to appoint Thomas Rankin, Esquire, O.B.E., L.D.S., F.D.S., to be Honorary Surgeon Dentist to Her Majesty in Scotland, in the room of Robert Charles Scott Dow, Esquire, L.R.C.P., L.R.C.S. Ed., L.D.S., deceased.

FURTHER REPORTS OF THE USE OF TRILENE ANÆSTHESIA IN CHILDREN

By W. H. MYERS, M.R.C.S., L.R.C.P.

THIS series of cases is a continuation of the one published in the *British Dental Journal* (Myers, 1950) in which 1800 administrations are commented upon. During the three years following, this method has been persisted in, and the average number of cases done per year for the last three is 5400, which is about 112 per week. All these cases received trilene together with nitrous oxide and oxygen.

Thus the total number of cases given by this report will be:

First year	1,800
Next three years	16,200
Total	18,000

The patients were almost entirely children of school age, in some cases a little below, and entirely were cases requiring exondontia.

The machine and equipment were very similar to that previously described—trilene was contained in a Marrett's bottle, and the gas was delivered either from a Walton machine (No. 2 or 3) or from a portable rotameter machine, not yet on the market but being tried out. No rebreathing bag was used on the Walton, but was used on the rotameter machine, and the gases were delivered through a corrugated wide-bore tube to a Goldman's nasal inhaler which was secured to the head with a Connell's harness.

The method was in no way altered, the induction being purely nitrous oxide until the respirations became regular and more rapid, when oxygen was given—sometimes more than, but never less than, 10 per cent. Pressure was never more than just audible when the nose-piece was placed to the ear, and only if the patient showed any sign of movement was the pressure lever moved over a little.

Never was the pressure raised so that it sounded like a wounded tyre—a policy neither useful nor good for the unfortunate in the chair.

One thing of paramount importance is the maintenance of an adequate airway throughout the whole operation. Each breath must be heard or accounted for, and this strictly was the case in this series, even though a firm wool mouthpack was used in every case.

All these precautions aimed at giving at all times sufficient oxygen to prevent cyanosis, jactitation, or opisthotonus, which defeats the object of administration of trilene, for it is with the summated effect of trilene to nitrous oxide–oxygen that allows the ratio to be larger in favour of oxygen. In all these cases there was not one which caused me to worry, or indeed gave any anxiety at all.

CONCLUSION AND SUMMARY

A total of 18,000 cases of dental extraction in children, using nitrous-oxide–oxygen–trilene, has been described as a follow-on report to the one in 1950. In no further case was there the slightest cause for anxiety. With adequate oxygenation trilene continues to be a perfectly safe and reliable method of supplementing nitrous-oxide–oxygen anæsthesia in children.

REFERENCE

MYERS, W. H. (1950), *Brit. dent. J.*, **88**, May 5, 244.

Treatment of Arthritic Temporomandibular Joints by Intra-Articular Injection of Hydrocortisone

TREATMENT of ankylosis of the temporomandibular joint in patients suffering from rheumatoid arthritis can be very frustrating. Use of cortisone—a saline suspension of hydrocortisone acetate containing 25 mg. per cubic centimeter—as an intra-articular injection, has provided some relief in cases presented by the author. The technique of injection is described. It may be necessary to repeat the treatment in certain cases, to obtain encouraging results. —HORTON, C. P. (1953), *Oral Surg.*, **6**, 826.

DENTAL SERVICE IN THE COMMONWEALTH

DENTISTRY IN THE FEDERATION OF MALAYA

By C. F. MUMMERY, O.B.E., E.D., F.D.S.

LEGISLATION

PRIOR to 1934 there was no dental legislation in the territories now comprising the Federation of Malaya. The only control of dental practice was the necessity to hold a deleterious drug licence to enable the practitioner to own and use a hypodermic syringe.

In the year 1934 the Federated Malay States (Perak, Selangor, Negri Sembilan, and Pahang) introduced an enactment to register all persons practising dentistry. This legislation was based very largely on the Dentists' Act of 1921 of the United Kingdom. It made provision for a Dental Board and a Dental Register, and while registering all then in practice made the possession of a registerable qualification the only means of future registration.

The Un-federated Malay States with the exception of Kelantan and Perlis followed suit with similar legislation. Kelantan still registered its dentists under a clause of its Deleterious Drugs Enactment and Perlis did not introduce any measure of dental control at all.

The Japanese occupation of Malaya undid the attempt to control practice, as the Japanese standard for registration seems to have been the ability to pay the fee rather than any academic qualification.

On the re-occupation by British Forces in 1945 two dental problems had to be faced. One, the territorial regrouping of States into what was at first the Malayan Union and latterly the Federation of Malaya, made a new Ordinance essential to replace the various State Enactments.

The drafting of this Ordinance and the repeal of the old Enactments took two years and it was not until 1948 that the Registration of Dentists' Ordinance, Federation of Malaya, came into being.

Fig. 1.—A school dental clinic in St. George's Girls School, Penang.

Fig. 2.—A dental specialist.

The second problem was the very large number of Japanese-registered dentists who now successfully petitioned Government for recognition on the grounds of vested interests. The Ordinance, almost at its inception, had to be amended to allow for examination of this category and the registration of those who were not actually public menaces. These examinations, which took a further two years, have now been completed and the register is again closed, with a registerable qualification the only entry to newcomers.

The Dental Board has ten members and is under the Presidency of the Director of Medical Services. Of the ten members three are medical officers and seven dental. Of the seven dental officers six are qualified and one

registered but unqualified. Of the total number of Board members, four are Government servants and six are not. The University of Malaya is represented, as is also the Malayan Dental Association (affiliated with the B.D.A.) and the Central Malaya Chinese Dentists' Association (an association of registered but unqualified dentists).

Fig. 3.—Dental nurses' training school, Penang.

The Board is responsible for the registration of dentists and prosecutions arising from illegal practice or other disciplinary matters. It also endeavours to raise the standard of practice amongst the unqualified dentists on the register by periodic inspection of premises and by education of this category by lectures, pamphlets, and posters.

THE PROBLEM

The Federation of Malaya has a population of five million. Two million are Malays, two million Chinese, and the remaining million is composed of Indians, Eurasians, aborigines, Europeans, and others.

The Chinese population is largely urban and the Malay mostly rural. The Indians at one time were immigrants, but since immigration from India has ceased, they are rapidly becoming second-generation Malayans. This point is of dental interest because the once excellent teeth of the Indian immigrant are rapidly becoming the caries-ridden dentition of the Malayan-born.

Dental surveys reveal that 95 per cent of the Chinese population require dental treatment, 90 per cent of the Malays, and 60 per cent of the present-day Indian. The last figure has risen from 40 per cent during the writer's service in Malaya (29 years).

In the register on Jan. 1, 1953, there were 68 qualified dental surgeons and 561 registered dentists.

The policy adopted by the Government for dental treatment by the Government Dental Service gives priority to children. In addition expectant mothers, the very poor, lepers, and the Police Force are eligible for treatment. The bulk of the adult population is not treated by the Government dental scheme but is left to make its own arrangements with private practitioners. It is realized, however, that certain specialist treatment, above the scope of the average practitioner, is a Government responsibility and to this end officers have been given facilities for post-graduate study overseas and are employed in hospitals as dental specialists.

Fig. 4.—Side view of mobile clinic. Dental nurse working.

Malaya, when compared to other countries in Asia, is very healthy. Malaria has been

controlled, yellow fever is non-existent, smallpox rare, and all the major outbreaks of disease which ravage neighbouring countries are mercifully absent, owing, of course, to the efforts of the Malayan Medical Service. However, the one disease which is rampant and not under control is dental caries. Periodontal disease exists particularly in the Indians and to a lesser degree in Malays, but it is caries that is the main problem.

THE GOVERNMENT DENTAL SERVICE, FEDERATION OF MALAYA

The establishment of this service makes provision for a Chief Dental Officer who is an

Fig. 5.—Rear view of mobile clinic. Dental officer working.

administrative officer of A.D.M.S. rank and pay.

There are two Specialist Dental Officers, one stationed in Penang and one in Johore Bahru. Both officers are Fellows in Dental Surgery of the R.C.S. England, and have the rank and pay of Specialist Medical Officers.

There is provision for 50 Dental Officers on the same time-scale as Medical Officers. At the moment 38 of these posts are filled. Provision also exists for 8 Dental Housemen. These latter posts are filled by graduates from the University of Malaya (Singapore) who

Fig. 6.—Dental mechanics in training.

serve one year and then either enter Government Service or go to private practice.

THE DENTAL NURSES' TRAINING SCHOOL, PENANG

This institution was started in 1949, as it was found that the number of dental officers required for the treatment of the children in Malaya was unprocurable and the country's finances would not permit of such a commitment.

The aim of this School is to produce five dental nurses for every dental officer so that routine treatment such as simple amalgams, easy extraction, scalings, topical application of fluorine, etc., is taken off his hands and he has time for the more complicated procedures for which he is qualified. Up to date only 50 of the target 250 have been trained and there are 20 in training.

The School is in charge of a Dental Officer who has recently returned from New Zealand, where he was attached to the Dominion School for Dental Nurses, Wellington, for teaching experience.

A New Zealand Sister Tutor is on the Penang School staff and two Malayan Sisters have been trained in New Zealand and are employed in teaching here. Two more Malayan nurses are in Wellington for training.

When the School was first established, staff nurses from the Medical Department were recruited and given a course of one year in purely dental subjects at the Penang School and then given another year in the field under the Dental Officer to whom they would eventually be attached. The recruitment of

Fig. 7.—Mobile dental clinic at Prai, Province Wellesley. Staff: dental officer, dental nurse, chairside attendant, driver.

staff nurses proved so popular with the nurses and so unpopular with the hospital authorities that it had to be abandoned.

Dental nurses are now recruited straight from school, and as they have now to be taught the basic subjects which were taken for granted in their predecessors, the course has been increased to three years and four months.

The first four months are a probationary period wherein the aptitude for ultimate training is tested. Of the remaining three years, two are spent in the Penang School and the final one attached to a Dental Officer in the field.

It has been found that the dental nurse can handle children much better than the most experienced male dental officer and that in her narrow field her work compares very favourably with the same type of work done by any dental officer in the Service.

The Malayan dental nurse has a double limitation. Her work is limited to amalgam fillings, extractions, scaling, and topical application of fluorine, and she is not allowed to treat anybody above the age of 14.

DENTAL MECHANICS

These ancillary workers are trained in Penang. The course is two years and at the end of their course they are capable of work that the average technician is called upon to do.

METHOD OF EMPLOYMENT OF DENTAL STAFF

Every endeavour is being made to build up dental teams to treat all areas throughout the Federation. The central figure of the team is the Dental Officer. The school work is taken off his hands by his five dental nurses and he has a mechanic or technician to carry out the prosthetic work. He trains his own chairside assistants and has one or two male attendants to do heavy cleaning, etc.

Dental centres have been established in thirty-one areas: — Six in Johore, one in Malacca, four in Negri Sembilan, three in Selangor, four in Perak, two in Penang, three in Province Wellesley, three in Kedah, one in Kelantan, one in Trengganu, and three in Pahang.

The Dental Officer in most centres has his clinic in the District Hospital; he establishes

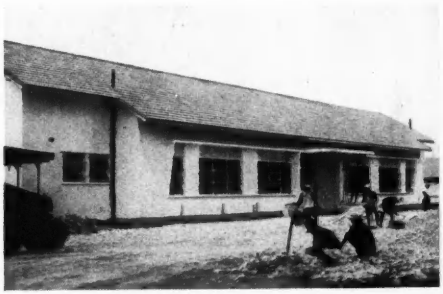

Fig. 8.—New building standard rural health centre. Resident staff: health nurse, dental nurse, dispenser. Visiting staff: medical officer, dental officer.

his dental nurses in schools in his area and in subsidiary clinics in surrounding kampongs or villages. Population centres which do not warrant a subsidiary clinic are treated by means of mobile dental vans. There are seven of these vehicles now operating.

SOCIETY NOTES

FEDERATION DENTAIRE INTERNATIONALE

The XLIst Annual Meeting, Oslo, Norway, July 26–August 1, 1953

THE forty-first Annual Meeting of the Fédération Dentaire Internationale was held in Oslo, Norway, from July 26 to August 1, under the auspices of the Norwegian Dental Association.

The Council of the Federation met on Saturday, July 25, and Sunday, July 26. The inaugural meeting was held on Monday morning at the Oslo Handelsstands Hus. The President of the F.D.I., Dr. O. A. Oliver, of the United States of America, gave a short speech, followed by the Norwegian Minister of Social Affairs, Statsrad Aaslaug Aasland, who welcomed the Delegates to Oslo and formally opened the meeting. Dr. Grythe, Chairman of the Norwegian Organizing Committee, gave a short address in which he outlined the programme for the week, which was to prove such an outstanding success.

The first meeting of the General Assembly was held in the afternoon, when a system of simultaneous interpretation was in operation.

In the evening, Delegates were entertained by the Municipality of Oslo at the beautiful Town Hall. This modern building of exceptional grandeur was admired by all the visitors who had the good fortune to attend.

On Tuesday the real work of the week began with meetings of the Commissions, and an Open Meeting by the Scientific Commission was held in the morning. This meeting took the form of a panel discussion on "Sugar and Dental Caries" presided over by Dr. W. Stewart Ross.

In the afternoon an Open Meeting was held by the Armed Forces Commission on the "Relations and collaboration between Civil and Military Authorities concerning the organization of Dental Health Care". An introduction was given by Brigadier General Marvin E. Kennebeck, U.S.A.

On Wednesday morning the Commissions met again in closed session, and in the afternoon a Joint Open Meeting was arranged by the Oral Health and Scientific Commissions. This was once again organized as a panel discussion entitled "Fluorine and Oral Health", and was presided over by Dr. E. W. Fish (United Kingdom).

In the evening the Delegates were invited to a reception at Akershus Castle given by the Norwegian Government. The Norwegian Minister of Social Affairs welcomed the guests and mingled with the Delegates throughout a delightful evening in one of the oldest and loveliest castles in Norway.

On the Thursday, an all-day excursion was organized when Delegates were given an opportunity of seeing something of the beautiful mountain scenery surrounding Oslo, and a visit was made to the Kon-Tiki Raft, the Polar exploration ship Fram and to some beautiful examples of the ancient Viking ships which had been buried hundreds of years ago, and one of which was the last resting-place of a Viking Queen.

The Council of the Federation met again on Friday morning and in the afternoon a report on the Public Dental Services in Norway was given by Dr. Jacob Ramm, Chief Dental Officer, Oslo Public Dental Service. The meeting was presided over by Dr. T. Brandrup-Wognsen and the ensuing discussion was opened by Dr. H. Berggren (Stockholm, Sweden) and Dr. M. Vincent (Paris, France).

On Friday evening a Banquet was held at the Royal Norwegian Sailing Club, Dronninger, followed by a display of Norwegian folk dancing, and finally the evening was given over to dancing. This memorable evening marked the close of the week's meeting with the exception of the final session of the General Assembly on Saturday and a meeting of the Council of the Federation on Sunday, August 2.

The General Assembly accepted unanimously an invitation from the Dutch Dental Association to hold the next Meeting of the Federation at the Hague, Netherlands, on June 10, 1954.

It was announced at this meeting that there had been a total of 141 enrolments of Delegates, Alternates, Observers and visitors to the Meeting, from no less than 19 countries. There were approximately 220 people attending the meeting.

In conclusion, it would be an omission not to mention the fine work of the Secretary General, Dr. G. H. Leatherman, and his staff, and of the Hon. Treasurer, Dr. J. Stork, (Netherlands). During the meeting and throughout the year these two Officers have worked tirelessly in an endeavour to strengthen and improve the structure of the Federation. The culmination of their efforts resulted in the smooth running of the administrative meetings throughout the session.

INSTITUTE OF BRITISH SURGICAL TECHNICIANS

INAUGURAL LECTURE IN MANCHESTER

THE Dental Section of the Institute of British Surgical Technicians held its first lecture outside the London area at the Manchester Dental Hospital on Thursday, Oct. 8, at 7.30 p.m.

Mr. N. Wild, B.Sc., L.D.S., in his lecture on "An Approach to Orthodontics" revealed, much to the surprise of many present, that malformations of the tooth were mentioned in some of the earliest manuscripts. Lantern slides showed appliances from the eighteenth century onwards and gave the audience valuable background and knowledge. Principles of spring movement given during the initial stages of the lecture were illustrated by slides showing the most modern appliances. The simple yet obviously effective spring loops shown for the distal movement of teeth are sure to prove very popular with orthodontists.

OPENING OF 1953–54 PROGRAMME IN LONDON

The opening lecture on "Anatomical Articulation" was given by Professor H. B. Fenn, F.D.S., D.D.S., on October 20.

Commencing with a definition of the terms "occlusion", "balanced occlusion", and "anatomical articulation", Professor Fenn cited examples of specialized teeth adapted to the needs of the carnivorous and herbivorous animals, leading up to man, whose temporomandibular joint and teeth were designed to enable him to eat all kinds of civilized foodstuffs. After describing the ordinary movements of mastication the lecturer stressed the necessity for dentures of maximum efficiency to compensate for the loss of direct pressure exerted by the natural teeth and the part played by anatomical articulation in achieving this result. The loss of lateral movement with a denture set up on a purely hinged type of articulator and the tilted effect in the process of mastication on the non-working side was explained and various criticisms advanced against anatomical articulation were adequately answered. Anatomical articulation was considered to be worth while for three main reasons, which briefly summarized were: (1) it allowed the natural use of the temporomandibular joint after the removal of the teeth; (2) it permitted the patient to continue with the same masticatory movements he had in many cases been exercising over a long period of years; (3) a free mandibular movement minimized possible damage to the temporomandibular joint.

THE DENNY AWARD

A Silver Cup has been presented to the Dental Section by a generous donor and will be known as the Denny Award. It will be awarded annually to the Member or Associate of the Institute submitting the best paper on a Dental Technological subject. The Trophy will be presented to the successful competitor at the Annual General Meeting of the Dental Section in March, 1954, when the prize-winning paper will be read. Entries, addressed to the Secretary, should reach the Institute not later than January 31, 1954.

INTERNATIONAL CONGRESS OF DENTAL SCIENCE

THE Association des Licencies et Dentistes Universitaires de Belgique have organized an International Congress to commemorate the twenty-fifth anniversary of the creation of the academic degree of Licentiate in Dental Science and the twentieth anniversary of the Association.

The Congress will be presided over by Dr. F. Noterman, Licentiate in Dental Science, of Brussels, and will be held at the Casino de Knocke-Albert-Plage from May 26 to May 31, 1954. Communications should be addressed to the President, 141 Avenue Carton de Wiart, Brussels.

THE PROCEEDINGS OF THE BRITISH SOCIETY OF PERIODONTOLOGY

President: A. FRANK STAMMERS, M.D.S.
Hon. Secretary: H. THOMPSON, L.D.S. R.F.P.S. Glasg., H.D.D. R.C.S. Edin.
53, Portland Place, London, W.1.
Vol. IV, No. 2 December, 1953

XIIIth CONGRESS OF THE A.R.P.A. IN GENEVA

JULY 14–19, 1953

Report by **E. C. FOX**, M.D., L.D.S.

THERE was a friendly atmosphere at the informal meeting on the eve of Congress, where members from all parts of the world met and exchanged social greetings. Next day the Congress was opened officially by the Rector of the University of Geneva in the Aula of the university and this was followed by speeches from prominent personalities interspersed by music. The roll of the nations present was called and Great Britain was hailed by an especial cheer. The morning session was concluded by a scientific paper read by Professor Rutishauser.

In the afternoon the Congress moved to the Theatre de la Cour Saint-Pierre, which was to be the venue for the rest of the week. During the afternoon papers were read on juvenile periodontal disease, and some interesting new aspects were discussed with reference to acropathy, keratoma, eosinophil granuloma, plasmocytosis, and dysfunction of the adrenal glands.

The first session on Wednesday was devoted to the showing of films for the competition award. Unfortunately the author's film missed the entry date for the competition, but it was shown first and received a warm reception, and copies of it were requested from Israel and Chile. Films shown in the competition were from Switzerland, France, U.S.A. (U.S. Navy), Sweden, and Great Britain. The first prize was awarded to the U.S. Navy film on gingivectomy, and the second prize to Great Britain for Mr. W. G. Cross's film on the flap operation. Another film worthy of mention was Professor Norberg's on bite equilibration.

The main discussion of the morning session dealt with the therapy of reactivation. This took the form of a re-statement of orthodox methods and all speakers recommended Muehlemann's Periodontometer.

On Wednesday afternoon Professor Miller (New York), speaking on acute necrotizing gingivitis, said that his chief therapy consisted of daily doses of 500 mg. of ascorbic acid. Hilming (Copenhagen) and the author pointed out, in the discussion which followed, that such views might prove misleading to the general practitioner and also to the public through the press since several journalists were present. Later, Professor Thielemann (Germany) discussed some new aspects of the relationship between periodontal disease and focal infection, and this was illustrated by a film. The afternoon's proceedings were concluded by a reception given by the City of Geneva at the Opera House, where all the grandeur of the city's resources made it a most memorable event. The day ended with a visit to the Art Museum, where scenes from the French Classics were presented in a most picturesque setting.

Thursday morning was occupied by an administrative session and this was followed by a luncheon given by Dr. Jaccard for members representing the countries present. At this the author was asked to give an address and it was given in English. In the afternoon a visit to the Palace of the League of Nations was arranged and this was followed by a reception given by the World Health Organization. Later a reception was given by Professor

Held in the garden of his home, where the perfect weather and picturesque views of the lake and mountains made this an outstanding function.

On Friday morning more films were shown and papers were read on the social aspect of periodontal disease. In the absence of Mr. W. G. Cross, his paper was read by the author of this report and it received a friendly reception. During the afternoon a joint reception was given by the Swiss Dental Association, the A.R.P.A. Suisse and the association des Medecins-dentistes de Geneve. This was followed by table demonstrations which showed in particular the high technical skill of our Swiss colleagues.

The latest recommendation from A.R.P.A. on the controversial problem of nomenclature is as follows:—

ODONTON

ODONTIUM PARODENTIUM
LIGAMENTE = DESMODENTE
ODONTE = DENT

Saturday began the showing of the three prize-winning films and continued with general discussion and the announcement of decisions and resolutions. Dr. E. W. Fish and Mr. W. G. Cross were elected honorary members of A.R.P.A., an honour which very few have received.

The Congress ended with a banquet and ball on Saturday night at which the author was given a place of honour at the head table. He was one of the first speakers to be called and his speech was given in English, French, and German.

In conclusion it has to be said that the Congress was led by the three powerful personalities of Dr. Jaccard, Professor Held, and Dr. Vauthier, and this, together with the valuable contributions from all over the world, made the Congress a real success. The high standard of organization prevented overlapping of papers and demonstrations, and the hospitality of the Swiss hosts left an impression that will not easily be forgotten. Interest was shown in the British Society of Periodontology by many of the members and hopes for a closer co-operation between it and A.R.P.A. were continually being expressed.

The next Congress will be held in Venice in 1955 and the author has been invited to take part again.

ABSTRACTS
from Other Journals

The Effects of Orthodontic Cement on Tooth Enamel

The authors make some acknowledgement to *The Dental Record* and there are thirteen references. Methods used for assessing enamel decalcification are: (1) Gross attack, this is usually readily detectable; Grenz rays used for verification. (2) Surface meter; similar to a gramophone pick-up. (3) Replica methods; readily applicable to uneven surfaces. 2 per cent callodion is applied to the suspected tooth surface. This callodion is then stripped from the tooth and examined microscopically by special methods. (4) Dye penetration.

The cements used were zinc phosphate, red copper, and a typical silicate cement. The value of these cements under various setting conditions was investigated electrometrically beforehand.

The investigational programme was divided into two sections, viz., clinical and laboratory, for which suitable teeth were required. In the laboratory tests reasonably sound teeth from 10–18 age group were used and damage to the enamel surface was minimal during extraction. Teeth which were subsequently to be extracted were selected for the clinical tests which were in progress concurrently with the laboratory tests.

As a result of the investigation it was concluded that orthodontic cements did not attack the natural surface of sound tooth enamel except when abnormally thin mixes were used. Mixes of all cements with a consistency of 0·5 g. powder per 1 mil liquid gave definite

evidence of decalcification, and they were quite useless for cementing purposes, being too thin and not setting properly. With a 1·0 g. per mil mixture the surface was affected to the extent that strong absorption of dyes such as methyl violet was observed although no difference in the enamel could be detected by other means.

For those cases of altered enamel appearance under orthodontic bands, occasionally reported by orthodontists, which are not due to cement which is too thin in consistency, the authors suggest that some idiosyncrasy of the patient may exist which has not been observed in the teeth used in the investigation. In this connexion Bodecker felt that the variable factor in etching under bands was possibly in the enamel itself, and urged that observations be made in orthodontic clinics correlating the degree of etching with caries susceptibility. The possibility of leakage under bands and subsequent decalcification should not be overlooked. Such leakage may result from repeated thermal variations or masticatory forces. Bacterial activity is not to be overlooked for it appears that the presence of orthodontic appliances in patients tends to increase the lactobacillus count. If etching does occur it is likely to do so during the setting of the cement when the acidity is high, whereas the reported examples of enamel attack seem to apply chiefly to bands which have been left on teeth for long periods. This lends support to the theory of leakage. The clinical and laboratory findings confirm those of Gross and conflict with those of Lefkowitz and Costello.—Docking, A. R., Donnison, J. A., Newbury, C. R., and Storey, E. (1953), *Aust. J. Dent.*, **57**, 139.

Fibrosarcoma of the Tongue

Fibrosarcoma of the tongue is a rare condition. A case has been described, a striking feature of which is the previous history of malignancy (carcinoma) and irradiation of the tongue nine years before.

The patient is aged 75 years. In 1940 he had a squamous-cell carcinoma of the right lateral border of the tongue which was treated by diathermy excision followed by interstitial radium. The result was satisfactory. In May, 1949, the patient experienced difficulty in speaking. At first it was attributed to dentures and they were re-modelled in September, 1949. In October, 1949, however, the patient had to be admitted as he had greater difficulty in eating and speaking. A diagnosis of fibrosarcoma was confirmed by histology.

It is a strange coincidence that two different malignant tumours developed in the same organ. Could the irradiation of the first condition have led to the sarcomatous development?

The treatment was total glossectomy and there has been freedom from recurrence for three years. The patient can talk intelligibly and has no difficulty in eating.—Durden-Smith, A. J., and Weavers, K. T. (1953), *Brit. J. Surg.*, **40**, 624.

The Sweet Tooth

It is generally believed that an important cause of dental caries is the excessive consumption of readily fermentable carbohydrates.

The Swedish Government and the Swedish Dental Institute have investigated to evaluate the part played by these carbohydrates in dental caries.

Sugar was added to the basic diet of different groups of patients in different ways. These findings were correlated and the following conclusions were drawn:—

1. Sugar in the form of sticky sweets consumed between meals causes a marked increase in the number of new carious cavities.

2. Sugar taken with meals is not so deleterious.

3. Chocolate appears to be less apt to produce caries than toffees.

It was also shown that some individuals could consume sweets between meals over long periods whilst others not consuming any sweets or sugar developed many new cavities. Therefore it is evident that there must be other factors in the causation of dental caries, also it is evident that the frequent eating of sticky sweets before meals is one of the prime causes of caries in many people.

If, however, the mouth was rinsed with water, which was then swallowed immediately after eating sweets or after meals, it would greatly reduce the concentration of sugar in the mouth.—*Brit. med. J.*, 1953, **1**, 331.

Prosthetic Mucosal Hypertrophy in the Mouth simulating Malignancy

Hypertrophic tumours in the mouth due to irritation by ill-fitting dentures have been known to exist for a considerable time. Attention is drawn to the condition in this article, and the commonest sites are stated to be the alveolo-buccal sulcus of upper and lower jaw and the hard palate. The tumours can be mistaken for malignant tumours. Treatment is usually by simple excision, and spontaneous resolution may be adequate in the occasional case, especially for small lesions on the hard palate. In the majority of cases a completely new denture is nearly always necessary.—WALTER, J. (1953), *Brit. med. J.*, **1**, 1429.

The Crests of the Interdental Alveolar Septa

This is a very critical analysis of the radiographic interpretation of different periodontal lesions affecting marginal and lateral parts of the periodontium in which the correlation is drawn between the histological and radiographic findings. It is shown that in the absence of periodontal disease the configuration of the crests of the interdental alveolar septa are determined by the relative positions of the cemento-enamel junctions, and that the width of the septa is related to the convexity of the proximal aspects of the two crowns.

When periodontal disease changes the shape of the septa the pattern produced is affected by the specific pathological process. It is concluded that if mesial and distal contacts between teeth are present no correlation exists between occlusal disharmonies of the radiographic and alveolar septa.—RITCHEY, B., and ORBAN, B. (1953), *J. Periodont.*, **24**, 75.

GENERAL DENTAL SERVICES

Anæsthetist's Responsibility

THE findings of the Dental Services Committee were challenged by the Ministry of Health in a case where a dental practitioner extracted the wrong tooth from a patient who was given a general anæsthetic by an anæsthetist. The dentist said that although he regretted the occurrence it was due to the unaccountable nervousness of the anæsthetist. The Dental Services Committee's opinion was: "There was an unavoidable breach of the Terms of Service in connexion with the administration of the general anæsthetic, and, although the fault lay primarily with the anæsthetist, the responsibility for the treatment of the patient nevertheless rests with the respondent (dental) practitioner".

On hearing this the Minister took advice from his lawyers and responded with the following opinion: "The Minister has noted and agrees with the recommendation of the council, except with regard to the findings that there was a breach of the Terms of Service. In this connexion . . . the Minister is advised by his lawyers that under the regulations the dentist is not responsible for the acts and omissions of the anæsthetist and that any person who suffers injury at the hands of the anæsthetist should be left to his civil rights for a remedy".

Identification of Patients on Payment Schedules

As some dentists have found difficulty in identifying the patients on their monthly payment schedules owing to several patients having similar names and initials, the British Dental Association has suggested, and the Ministry of Health and the Dental Estimates Board have agreed, that dentists may, if they wish, insert code letters or numbers after the names of any of their patients about whom they anticipate this difficulty may arise.

The code used should consist of not more than three digits, either letters or numbers or a mixture of both as the dentist may prefer, and should be placed immediately after the patient's surname in part 3 of the dental estimate form.

DENTAL BOARD OF THE UNITED KINGDOM

Chairman's Address at the Opening of the Sixty-fifth Session
November 11, 1953

GENTLEMEN,

You will have heard with regret of the death of our first Registrar, Colonel Norman King. When this Board came into existence in 1921, Colonel King had already been for nearly a quarter of a century in the service of the General Medical Council. So great was the part that he played in adapting to the new body the usages of the old that, although there is now no member of the Board who was a member in Colonel King's time, there is not one of us who is not intimately acquainted with his personality through his works. This is not the place to pay more than passing tribute to his distinguished service in the Territorial Army and on the Council of Haileybury College, or to the courage with which in his later years he bore physical disability and suffering which must have overcome a lesser man. For us it is enough that he did much to found the honourable traditions of efficient administration and intellectual integrity which have provided an inspiring example to his successors and to us all.

Since last we met we have also lost by death a very eminent and distinguished member of our profession, Dr. A. E. Rowlett. Dr. Rowlett was never a member of this Board, but he was associated with us through our Committee for Dental Health Education. His most outstanding work, however, lay in the International field, for which he was known and respected in most countries of the civilized world. I have written elsewhere of the many honours that were laid upon him, of the work he did, of the esteem in which he was held, and of the affection we all felt for him, but I know it would be your wish that I should pay tribute here also to the memory of this man who was indeed a very perfect gentleman.

You will wish me to tender to the President of the General Medical Council the warm congratulations of the Board on the honour of Knighthood conferred upon him in the Coronation List. We owe him a very real debt of gratitude, which it gives us great pleasure to acknowledge, for all that he has done to foster the cordial relations that exist between the two bodies.

You will be sorry to learn that Miss Baker will be retiring at the end of this year after thirty-two years spent in the Board's service, fifteen of them as our Chief Clerk. The position of Chief Clerk is an exacting one, adding to other heavy responsibilities the need to be prepared to deputize for the Registrar. During the difficult years of the war, Miss Baker did at times bear almost the whole of the burden of our office work and it was largely due to her that we were able to join the company of those who could affix the proud motto "business as usual". During these years she herself performed the duties of assistant, secretary, and typist to the Registrar and it is very certain that but for her Herculean efforts our evidence for the Teviot Committee could never have seen the light of day. Miss Baker has always made the meticulous task of preparing the Register for publication particularly her own, and its accuracy is a testimony to her unremitting care. We shall sadly miss her from her accustomed place in this room and her knowledge of our affairs since the earliest days makes her loss irreparable. At our next session we shall have an opportunity of thanking Miss Baker personally and wishing her well in her retirement. Now it is my part to record with gratitude the long and devoted service to which three Registrars have testified.

We are also to lose the services of our old friend Mr. F. P. Winterbotham, who, after acting as Solicitor both to the Board and to the General Medical Council for fifteen years, is soon to retire from active practice. Those who have been closely associated with the Board's legal business most appreciate the value of the astonishing memory for case-law which has perhaps been his greatest contribution to our counsels, but we shall all miss the warmth and charm of his presence at our social occasions. He is withdrawing to the mountains of Wales, but we hope that he will number the Board among the several interests which we believe will bring him from time to time to this foreign but friendly capital.

You will I know wish me to extend our congratulations to the University and City of Sheffield on the completion of their new Dental Hospital. I had the pleasure of representing you at the opening ceremony on Oct. 29, an occasion which was graced by the presence of Her Royal Highness the Duchess of Gloucester. The new building is a model of elegance and efficiency and reflects great credit on those who have put so many years of thoughtful work into the preparations of which it is the fruit.

Unfortunately the news from the educational front is not entirely good and while in Sheffield a teaching hospital has been evolved with unrivalled facilities for treating patients and preparing graduates for a more enlightened professional career, the entry to the dental schools throughout the country continues to decline and appears to be following a pattern similar to that observed after the 1914–18 War, when, after a temporary influx, the entry declined and remained at a low level for some years.

I have now to invite your attention to a recent judgment in the Court of Appeal. You will recollect that as a result of an earlier decision in that Court in the case of Twyford *v.* Punschart and Others, some doubt had been thrown upon the extent to which a person not registered in the Dentists Register might give "treatment, advice or attendance on or to any person as preparatory to or for the purpose of or in connection with the fitting insertion or fixing" of dentures without contravening the provisions of the Dentists Acts. In the new case to which I refer, Almy *v.* Thomas, the Board appealed against the decision of a Magistrates' Court dismissing a prosecution brought by the Board on the grounds that "work on an existing denture, or merely altering an existing denture, does not amount to the practice of dentistry". The Magistrates had found as facts that the Respondent, who was not a registered dentist, had relined a dental plate by covering it with a paste, asking the owner to put it into her mouth in order to allow the paste to set in conformity with the shape of the mouth and subsequently replacing the hardened paste with permanent plastic. In allowing the appeal, the Lord Chief Justice said that for himself he found it impossible in view of the findings of fact reached by the Magistrates to say that the Respondent had not given treatment or attendance in connexion

with the fitting of artificial teeth. Referring to section 14(2) of the Dentists Act, 1921, he said "It is certainly to be observed . . . that the word 'denture' does not appear in that section but, as everybody knows, except in what is called the crowning operation, artificial teeth are at any rate fitted to a person's mouth by means of a denture, and I do not think it has ever been doubted that a denture can come within section 14, and if it did not there would be a very great gap in the Act which was never intended." In concurring with this judgment, Mr. Justice Havers added that in his opinion there would have been no offence against the provisions of the Act if the work could have been done simply by taking the plate and re-lining it, without asking the owner to replace it in her mouth.

I will not attempt to predict the duration of this session, but the business before us includes matters of importance and will certainly occupy us until to-morrow afternoon.

BOOK REVIEWS

INLAYS AND ABUTMENTS. Their Preparation and Construction for Dental Restorations. By JACOB R. SCHWARTZ, D.D.S. 6 × 9⅛ in. Pp. 478 + xiv, with 514 illustrations. 1953. Brooklyn, N.Y.: Dental Items of Interest Pub. Co. Inc. London: Henry Kimpton. 60s.

DR. SCHWARTZ'S new book on inlays and abutments is disappointing, considering the high esteem in which he is held by the profession. There is plenty to interest the specialist in this aspect of dentistry, but one doubts its practical value in modern teaching. This is said with the full knowledge that the book is written from a purely practical aspect, filled with illustrations of every technique. A modern text-book should present modern techniques and yet it is filled with the older techniques which cover chapter after chapter. The porcelain-faced gold jacket crown which few men would attempt these days takes twenty pages, while it is doubtful if the McBoyle preparation which has a chapter to itself has any place at all. Despite the author's opening remarks about lecturers who only show preparations on perfect teeth, all the illustrations show just this fault. There is no mention of linings or how to treat teeth that have extensive carious destruction.

In the chapter on the operating position the author praises the use of a stool, but illustrates only how to work in the standing position. Unfortunately the diagrams (*Figs.* 43–45) showing these positions and the difference between the correct and incorrect, are useless. The circles drawn round the operator and the chair are of different diameters and prove nothing.

The laboratory techniques are given special attention, as are the chapters on gold, but one feels they are rather out of proportion to the amount of text on the operative procedures. The whole book gives an air of complication to the subject and the student and general practitioner will be lost in a sea of preparations, names, and long lists of enumerated steps in techniques.

The book is well printed and clearly illustrated, and the price, like that of all American text-books, is somewhat high.

N. L. W.

THE FABER MEDICAL DICTIONARY. Edited by SIR CECIL WAKELEY, Bt. 7¼ × 10½ in. Pp. 471 + vii. 1953. London: Faber & Faber. 45s.

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N. L. W.

OFFICIAL SUPPLEMENT OF THE

SURGICAL INSTRUMENT MANUFACTURERS' ASSOCIATION (INC.)

DENTAL LABORATORIES SECTION

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Vol. III, No. 9 December, 1953

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EDITORIAL

THE demand for technical knowledge in its modern form can be said to have arisen as a result of the International Exhibition of 1851, which gave an opportunity for the first time of comparing the products of English manufacture with those of other countries, and which served to emphasize the importance of science and art in relation to industry.

One result was the founding of the Science and Art Department at South Kensington, and the beginning of propaganda on behalf of technical education. Receiving a further impetus as a result of the Paris Exhibition of 1867, the movement found expression in the establishment of the City and Guilds of London Institute in 1880, and gave rise to the rapid spread of technical education after 1890.

In spite of the attention being paid to almost every other subject, it was not until the early 1920's that the important one of dental technology was included in the syllabus of any school, and then only in the form of evening classes held to supplement in many cases the meagre instruction apprentices received in the workshops of dental surgeons and master dental technicians.

In former days many dental surgeons were necessarily excellent mechanics, but it can be understood that very little of their valuable time could be spared to train their apprentices, and this work was therefore delegated to their employed mechanic, who, harrassed by the necessity for being a producer of prosthetic appliances of all kinds in abundance, very often found cause for irritation at having to act as a teacher as well.

In future days by reason of the increased time to be given to his studies, and the greater complexity of prosthetic work, it is unlikely that the average surgeon will have the experience to teach an apprentice dental technology properly, and the dental laboratory owner may not want the responsibility.

These tendencies have long been foreseen by some, hence over the past years we have seen the steadily increasing part taken by the technical school in regularizing training for our vocation, the result of the efforts of surgeons and technicians who have sacrificed much of their time and ability to interest themselves in such activities for the good of the whole profession.

May we anticipate the time when the whole of apprentice training will be done in the impersonal atmosphere of the technical school, with the granting of a finishing diploma. The hit-and-miss job for the youngster of finding a good employer, and the risk to the employer of a lad's changing disposition due to outside influences, will both alike be eliminated.

The greatly enhanced opportunity for absorbing knowledge is accompanied by the necessity for all employers to appreciate fully the seriousness of their commitments when indenturing an apprentice: they should be far more selective in their choice of entrants to our craft, for the results of the recent examinations for apprentices show that many

candidates who were allowed to sit had not received suitable preliminary schooling.

Some backward-looking surgeons question the propriety of diffusing knowledge among dental technicians, believing that the nation's health is not largely dependent upon a technician's accurate interpretation of a dentist's prescription. We claim that the greater the intelligence and knowledge of the technician, the better is the work for the patient, and the needs of modern progress demand that general sense of well-being throughout the craft which is dependent upon as much information as possible being made available to all.

Those who read the report of the discussion at the meeting of the International Union of Dental Laboratories last May, will be impressed by the co-operative spirit displayed by the sponsors and delegates, who should be honoured for their persistence in face of discouragements, for without doubt in all the nations there are experts, writers, critics, and groups, who do not design or build anything themselves, but who comment freely on those who do.

That dental technicians are getting together internationally, that the French visit Great Britain, that several nations have an interest in what goes on in dental technological circles in Paris, that the Italians make a gift of equipment and implements to the new Parisian technical school, such news items encourage hopes that even we may make a contributing iota to the goodwill in the world, thus preparing ourselves for the Christmas festival, which we trust all our members will enjoy.

Eric G. Emmett, London ; Professor John Osborne, Birmingham; W. H. Williams, Secretary to Technical Director, City and Guilds of London Institute; examining and assessing marks for the practical work of 1953. Intermediate candidates 668, 59 per cent pass. Final candidates 156, 13 per cent pass.

WEEK END CONFERENCE

Members are urged to support the fifth annual dinner and dance, and take advantage of the excellent opportunity to meet each other and entertain their friends in pleasant surroundings at the Holborn Restaurant on Friday, February 12, at 6.30 p.m. Tickets are 31/– each (two for £3) to be obtained from Mr. C. M. Booth, 26, Palmerston Road, N.22.

At 10.30 the following morning the annual general meeting will be held, followed by an informal luncheon at 1.0

In the afternoon, commencing at 2.30, an exhibition and display of dental laboratory equipment and techniques will be held in the Council Chamber, by members of the Association of Dental Manufacturers and Traders. Admission is by free ticket only, also obtainable from Mr. Booth.

INTERNATIONAL UNION OF DENTAL LABORATORIES

Verbatim report of discussion in the Paris Chamber of Commerce, May 17, of the draft by-laws which were published in the October Supplement

UNDER the presidency of André Drouhin, who had given to all present the right to speak and vote, M. Oosterbosch, Belgium, provincial secretary, read through the draft a second time, article by article.

Signor Vare, translating the intervention of Signor Martinazzi, proposes that only the most important clauses be discussed.

M. Seghettini (Nice) proposes that each delegation gives his advice. Signor Martinazzi gives his advice in Italian. M. Seghettini translates: In its entirety, S. Martinazzi sees no objection to accepting the by-laws as they are. He only wishes that certain modifications be made in accordance with the aims of the Italians, which are not Italian only, but equally those of several countries. In substance he would like not to exclude technicians, not even apprentices, yet he has respect to the desires of other nations who are interested in this internationl union. It is not to-day that one could define the exact bearing of the text of the by-laws. Whatever the outcome, the task must be continued and he askes that the diverse desires of all the nations be protected.

M. Oosterbosch: I understand. In fact the aims of our action are not defined with a strict precision, by which the possible claims are concerned. They cannot be after all in the by-laws. The terms are, however, loose enough to authorize all activities having for aim the defence of material and ethical interests of our profession. It would be premature and even dangerous for the good harmony of all the member countries, to impose beforehand some definite and precise aims and certain claims. The by-laws must not anticipate any claims; the "defence of material and ethical interests" allows for many claims, these may be well defined subsequently with full agreement with all member countries. We cannot see to-day what future circumstances will allow us to propose: to my mind one must not expand too much. Will the delegates be satisfied if article 3 is left as it is?

Signor Vare: I think, M. Oosterbosch, what you have said must be held in great consideration, and we can declare ourselves satisfied with the spirit of your answer. When you say this is not the time and give us to understand that the federation will not only be an information bureau, your answer satisfies us. Our organization is different from yours, but we feel more than ever the necessity to found a federation which will dare the conquest of the title of auxiliary to the surgeon.

Paris is chosen to be the seat of the International Federation. The general secretary and the administrative secretary should be French for the convenience of the management, and if possible Parisians.

A Belgian Delegate: I do not understand the suppression of the right to vote of the non-effective delegates as foreseen by Article 12.

M. Oosterbosch: It is necessary that the right to vote be restricted to the effective delegates only, and in their absence, to their substitutes. Without this precaution, the countries which can easily send numerous deputy delegates will have too great a number in comparison with other countries, for the travelling of these delegates is costly or difficult. The rule of number would play in favour of the first ones to the detriment of the others: this would be unfair.

A discussion takes place on the title to be given to the official organ of the federation. It is proposed to have an English title.

Mr. Beauchamp asks that in the title, or at least in the sub-title, the word "international" be included. Signor Vare expresses the desire to see the title in French. M. Hutsebaut (general secretary to the Belgian union) asks that the title be more scientific; for example "Revue Internationale des Techniciens de la Prothèse Dentaire". The Italian delegates have just told us that they have long ago relinquished the term of dental prosthetist.

M. Oosterbosch: It is a delicate question. We must satisfy everybody. Our American

colleagues who have important businesses which employ up to three hundred technicians could raise some objections, for our federation is essentially patronal. It seems to me that "Le Laboratoire Dentaire" is more acceptable.

Signor Vare: I think that first of all one must not only think of the American wishes, but also of those who are here present. Our Italian journal is called "Odontoprotesi", it contains accounts of our organization; and we could adopt the title of "L'Organ de la Federation Internationale des Laboratoires de Prothèse Dentaire".

M. Oosterbosch: Do not forget the aims of our organization and of our journal. I think it is not necessary that the title should be a long one, or that it contains terms which explain what our periodical is.

M. Seghettini: I think that to understand our Italian friends it is necessary to explain the position of the profession in Italy. In brief, there are no dental surgeons in that country, but the doctors are dentists as well. The association of prosthetists includes all the prosthesis personnel—employers, mechanics, and apprentices. It protects everyone. But there is another category which the Italians would not like their customary rights reinstated: those who work directly in the mouth.

After various interventions, the question of the title of the journal is resumed, and the assembly votes for the acceptance of "Le Laboratoire Dentaire: The Dental Laboratory". The provisional committee gives the assurance that the bi-lingual title will be followed by the secondary title and explanations, so satisfying all the wishes expressed by the delegates. Among those indications should appear: (1) the notion of the defence of the general interests of the profession; (2) the notion that the International Federation is primarily patronal.

M. Oosterbosch: Suppose in the future a denomination of our profession is meditated; that denomination is not alike in all countries, it should be the subject of future reports. The definition of our profession should be determined in harmony with the member countries. I think the Italians are alone in having an inclusive membership. We risk meeting insuperable difficulties with regard to that organization which admits employers and employees.

Afternoon meeting, commenced at 4.0 *p.m.*

M. Oosterbosch is given leave to speak: I dreaded to see coming into our ranks, elements which might disturb our action by untimely demands. I understand, however, that the Italian association excluded that risk from its aims, and aspired only to the common interest of all the prosthesis personnel. This actual situation compels me to confess that I was wrong to mistrust the Italian association, which groups a great number of persons, and which represents a real power which cannot be warded off. I will, however, always show my opposition to the admission of employee syndicates in our midst, we who are masters; we should find a simpler formula; I propose to you only to refuse organizations which are exclusively artisans.

M. Duvaudié: I think one must not mix the specifically artisan organizations and the specifically patronal ones in the same organism. In the framework of the French organization, a very great difference exists among the artisan circles. We have the great unions C.G.T. and C.F.T.C. It will be wrong to associate two bodies whose aims are opposed to one another. It would be enough for one to propose something, for the other to be against automatically, which follows that we must not sacrifice our artisans whose aims may be justifiable. On the other side, during lunch, I was led to believe that our Italian colleagues were organized in a very particular way. If I have properly understood, they protect the mass of the artisans specially to the point of view of the direct practice of the profession—that is to say—the supplying of prosthetic articles direct to the patient. For our part we neither condemn nor approve our Italian friends who do as they wish to suit themselves.

M. Perrot: I had the opportunity during the lunch interval to discuss with the Italian delegates. I would like to warn you against some regrettable constructions. If there was any real divergence, it would not befit me to

try and explain it, but there is in the beginning only a simple misunderstanding which finds its source in the particularity of each language, and in the impossibility to translate exactly by words the ideas one wants to enunciate.

When in the incriminated article 3 we have referred to the "protection of business interests" our Italian friends gave to this phrase a restrictive interpretation which it had not. With their Latin sensitiveness they would have liked, in keeping with the richness of their language, that we should express all the generous principles that can on a par go with the protection of business interests, that is to say—the general protection of the profession, the protection of the art of prosthetic dentistry, and the raising of the craft. One must see their sentiments which give them credit, we must well recognize this, that although these thoughts were ours, we left to the reader of our by-laws the care to guess them.

I earnestly ask that (it being tragic to justify a disagreement by a simple misunderstanding) you give to them a satisfaction of principle which agrees after all with our principles; it can be done without altering the substance, by only adding to the said article "the general interests of the profession". As to what concerns the Italian outlook, one must consider things very objectively, regard them under a favourable aspect. Few among you have had experience of an organization of employers having in their midst employees. For questions of expediency, reasons for which concern only our Italian friends, they have a patronal organization welcoming with liberalism salaried ones, artisans who work in collaboration for the protection of lofty principles; well it need not at issue mean contrariety, for we have found in history, that when a minority is active in the midst it is unlikely that it transforms the organism in its structure. The tendency to its stability is preserved in its framework, and it is the minority which when it finds itself in straits creates a new system, a new grouping by the side of the old one. In conclusion our Italians represent a patronal organization active in part by a fraction of its artisan members, giving it a new tendency which is not done to frighten the founders of the International Federation. The friends who are gathered here have already proved several times that they are not simply pre-occupied with purely material cares, but that they intend work for the good of the art, for the good of the profession. This protection of material interests of businesses, together with the general interests of the art, is a task for which all men of good will, active members of our respective organizations, work heartily, without forgetting for a single moment the human ideas to protect its dignity under all its framework, the dignity of the artisan class, as much as the dignity of the employer class.

M. President: I entirely approve the speech of M. Perrot.

M. Oosterbosch: I expect to be the interpreter of everyone by saying that it is out of the question that delegates returning to their respective countries would have the occasion to say, "Gentlemen, we could have established an international federation, but they do not want *our* participation". Quite the contrary, the by-laws have been framed in such a way that they may allow further additions, and to give everyone full liberty to collaborate without ulterior design.

Signor Vare, interpreting S. Martinazzi: We think that those by-laws leave an open door which we will close by excluding from our thoughts certain professional classes. By so doing we would ignore youthful proficiency, and it would be a serious error. Our aim is not to fight the employees or employers, but together strive for the protection of our art in favour of all. We approve the speech of M. Perrot who has satisfied us, but we add this—our position is not only prompted by sentimental considerations, but for benevolent reasons, and reasons of justice. We agree to add to the article 3 "the general interests of the profession" that we may show we are at the service of our colleagues, and that our efforts are not directed against such and such classes, for all the classes are dignified and have their worth.

In Milan we have a very nice prosthetic dentistry school: we strive to raise to the maximum the professional knowledge of the students. We have a class who practise their

art directly with the patients; this type has acquired by their long experience the right to practise normally. We hope that soon the whole profession in Italy will have laws sufficiently precise to regulate the general conduct of our art.

M. Tarquin asks questions regarding interesting points on the working of the profession in Italy.

M. Oosterbosch: I hope you are all aware of the importance of such international meetings. There is all the more reason to establish a permanent international organization; we must co-ordinate our efforts. As to the means foreseen by the by-laws to achieve the aims of the Federation, one must note that their enumeration is a specimen example and not a final one. To reassure everyone on this point, we could add after the words "to this end it will study . . ." "among other things to establish . . .".

Signor Vare: Thus, everything is perfect, we accept your proposition. We are considering the holding of a congress in May, 1954, at Milan, and we would be honoured by your presence. We would be happy to have another half-way meeting, say in October, in Switzerland so that we may meet our Swiss friends.

M. Oosterbosch: Our Italian colleagues' proposal seems to be excellent. I ask that the meeting which will take place at Milan during May, 1954, bears the name "International Congress of Prosthetic Dentistry" and is supported by our international Federation.

Another important point. We cannot assure the life of a federation without giving it material means to exist. The costs involved by this meeting in Paris are of note. It would not be fair that the same ones bear the costs. Moreover, we cannot demand the services of a non-professional administrative secretary without a just reward. It appears to me necessary to fix a subscription, even though it may be provisional.

Signor Vare: We must arrange this in a precise way: we could prepare an estimate of expenses which will have been incurred until October.

M. Duvaudié: We are all filled with good will. We want to do something of a novelty in our profession. I think that we must consider the expenses as being ours. We are very happy to have received our foreign colleagues; it is for us a great pleasure to have gathered you all here in Paris for this first manifestation.

Signor Vare: The Italians will be very glad to present to your new school a gift of Italian appliances and implements. I promise to see to it personally.

M. Duvaudié: This is very important for us to see that Italy wishes to make a gift to France. This is gratifying for the professional annals. I consider myself to be the interpreter of all my colleagues to offer our earnest thanks. With regard to the question of contributions, I ask M. Oosterbosch to study the position.

Signor Vare: I think we ought to send you our share of the expenses incurred: you will let us know the amount and after our arrival in Italy we will send it to you.

M. Duvaudié: We will decide the amount in October. For the moment we are happy to have covered the cost of an international organization; I must say the honour is ours.

M. Oosterbosch: Let us ask our national committees to send to the treasurer of the Federation an offer according to their means, and at their option. The remainder of the contribution to be paid later on, after October, or perhaps in May, 1954.

(This provisional proposal is accepted.)

It is out of the question to name to-day a general council, but we must name a provisional committee which will function until the nomination of the general council which will meet in Milan.

M. Duvaudié: If each delegate approves the by-laws we can open an account.

After several points of view, it is decided that the French association treasurer be named as International Federation treasurer, and the voluntary offers of financial support be sent to the account of the French association earmarked for the International Federation. The treasurer will keep a separate account.

(The provisional committee which will exist until October, or failing its substitution then, until May, 1954, consists of representatives from Great Britain, Italy, Belgium, and France who were named in the October Supplement.)